ESERCIZI IN PIÙ

ESERCIZI DI FINE CAPITOLO

Scomponi in fattori.

1 $(2x+y-8)^2-(2x+y)^2$; $4y^4-12y^3-y^2+6y-9$. $[-16(2x+y-4);(y-3)(4y^3-y+3)]$

2 a^2-4b-b^2-4; $x^{10}-6x^7+9x^4$. $[(a+b+2)(a-b-2);x^4(x^3-3)^2]$

3 $9x^2y^2+6xy(1-2xy)+(1-2xy)^2$; $\frac{1}{4}a^4-\frac{2}{3}a^2b+\frac{4}{9}b^2-\frac{1}{9}a^6$.

$\left[(1+xy)^2;\left(\frac{1}{2}a^2-\frac{2}{3}b+\frac{1}{3}a^3\right)\left(\frac{1}{2}a^2-\frac{2}{3}b-\frac{1}{3}a^3\right)\right]$

4 $b^2-2b+1-(a+b)^2$; $32a^4(b+1)^2-2x^4(b^2+2b+1)$.

$[-(a+1)(a+2b-1);2(b+1)^2(2a+x)(2a-x)(4a^2+x^2)]$

5 $b^5-5b^4-b^2+10b-25$; $\frac{a^4}{64}+\frac{a^2}{4}+1$; $x^2-12bx+36b^2$.

$\left[(b-5)(b^4-b+5);\left(\frac{a^2}{8}+1\right)^2;(x-6b)^2\right]$

6 $-\frac{x^6}{9}-9a^2-2ax^3$; $2b(a-x)^2-2a^2b$; $(x+2c)^2-(4x+8c)(x+c)$.

$\left[-\frac{1}{9}(x^3+9a)^2;-2bx(2a-x);(x+2c)(-3x-2c)\right]$

7 $\frac{125}{8}x^6y^3-8$ $\left[\left(\frac{5}{2}x^2y-2\right)\left(\frac{25}{4}x^4y^2+5x^2y+4\right)\right]$

8 $a^6-3a^4b+3a^2b^2-b^3$ $[(a^2-b)^3]$

9 $24x^7-3x$ $[3x(2x^2-1)(4x^4+2x^2+1)]$

10 $2x^9+x^6-2x^3-1$ $[(2x^3+1)(x-1)(x+1)(x^2+x+1)(x^2-x+1)]$

11 $-\frac{1}{27}a^3-y^3$ $\left[\left(-\frac{1}{3}a-y\right)\left(\frac{1}{9}a^2-\frac{1}{3}ay+y^2\right)\right]$

12 $2a^2+2b^2+12a+12b+4ab+18$ $[2(a+b+3)^2]$

13 $\frac{2}{27}-2x^3y^3-\frac{2}{3}xy+2x^2y^2$ $\left[2\left(\frac{1}{3}-xy\right)^3\right]$

14 x^4+2x^3-x-2 $[(x-1)(x+2)(x^2+x+1)]$

15 $x^4+x^2+a^4+a^2+2a^2x^2+\frac{1}{4}$ $\left[\left(x^2+a^2+\frac{1}{2}\right)^2\right]$

16 $a^5-9a^3+8a^2-72$ $[(a+2)(a-3)(a+3)(a^2-2a+4)]$

17 $x^{10} - 64x$ $[x(x^3 - 4)(x^6 + 4x^3 + 16)]$

18 $x^3 - 2x^2 - 9x + 18; \quad 5x^4y^4 - 10x^2y^2 + 5.$ $[(x + 3)(x - 3)(x - 2); 5(xy + 1)^2(xy - 1)^2]$

19 $2x^2 + 7x + 3$ $[(2x + 1)(x + 3)]$

20 $3x^2 - 7x + 2$ $[(3x - 1)(x - 2)]$

21 $4x^2 + 3x - 1$ $[(4x - 1)(x + 1)]$

22 $5x^2 - 13x - 6$ $[(5x + 2)(x - 3)]$

23 $(x - y)^2 - 3xy^2 + 3y^3$ $[(x - y)(x - y - 3y^2)]$

24 $y^2 + (2 - a)y - 2a$ $[(y + 2)(y - a)]$

25 $a^2 + a(5 - 2b) - 10b$ $[(a + 5)(a - 2b)]$

26 $(x + 2y)^3 + (x - 2y)^3$ $[2x(x^2 + 12y^2)]$

27 $\frac{4}{9}x^2 + \frac{2}{3}x + b - b^2$ $\left[\left(\frac{2}{3}x + b\right)\left(\frac{2}{3}x - b + 1\right)\right]$

28 $ax^2 + (a - 3)ax - 3a^2$ $[a(x - 3)(x + a)]$

29 $(x^2 - 3)(3 - x^2) + 2x^4 - x^2 - 15$ $[(x^2 - 3)(x^2 + 8)]$

30 $x^4y - 3x^3y^2 - 3x^2y^3 + 5xy^4$ $[xy(x - y)(x^2 - 2xy - 5y^2)]$